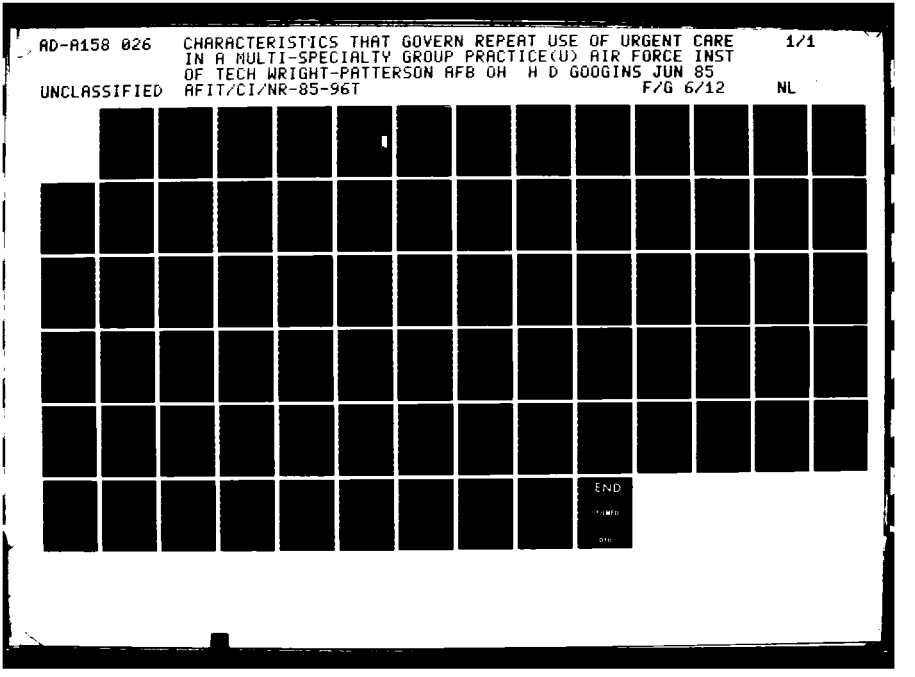
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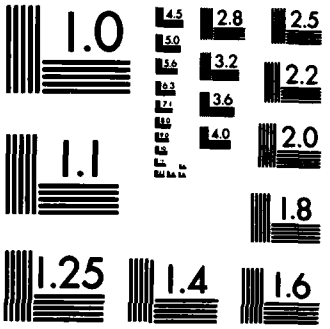

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CHARACTERISTICS THAT GOVERN REPEAT USE OF URGENT CARE IN A MULTI-SPECIALTY GROUP PRACTICE

A THESIS

SUBMITTED TO THE FACULTY OF THE PROGRAM IN HOSPITAL AND HEALTH CARE ADMINISTRATION OF THE UNIVERSITY OF MINNESOTA

BY

CAPTAIN HOWARD DENNIS GOOGINS

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE MHA DEGREE

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Preface

If the United States experiences an over supply of physicians as experts now predict, new opportunities will be sought to keep these highly trained individuals gainfully employed. One such opportunity that has been in existence since 1973 but has only achieved national notoriety within the last couple of years are the convenience clinics i.e. Minor Emergency Clinics, Freestanding Emergency Centers, Urgent Care Centers. These operations, patterned after the fast food restaurant concept, seek to provide medical care for non-life threatening conditions whenever and almost wherever a consumer might need it.

These convenience clinics claim to be fulfilling the needs of an underserved market segment, while at the same time reducing overall health care expenses. Some critics take exceptions with these claims suggesting that instead of lowering health care costs the convenience clinics are actually contributing to higher health care costs because of their lack of attention to continuity of care. Also, many primary care providers do not believe that there is a group of consumers whose health care needs are not being met quite adequately by the traditional means already in existence.

This study was designed to look at the issue of repeat use in an Urgent Care Center which is part of a large multi-specialty group practice. The literature and those responsible for the establishment of the Urgent Care Division in the group practice appear to agree that repeat use of Urgent Care Centers is less than optimal because Urgent Care focuses on episodes of illness rather than a consumer's total health status. Thus, a determinant of the characteristics governing

ABSTRACT

SUBJECT: URGENT CARE CENTERS

TITLE: Characteristics Governing Repeat Use of Urgent Care in a Multi-specialty Group Practice

AUTHOR: Captain Howard D. Googins

ADVISOR: Ira Moscovice, Ph.D.

RESEARCH SITE: Park Nicollet Medical Center, St. Louis Park, MN

PURPOSE: To attempt to determine what characteristics are common to repeat users of Urgent Care in order to develop a predictive model for Urgent Care repeat usage. Also, to assess how the concept of Urgent Care fits into a multi-specialty group practice setting.

METHODS USED: The Statistical Package of the Social Sciences (SPSS) was used to produce frequencies and accomplish cross-tabulations between the dependent and independent variables. The Chi-Square Statistic and Student's "t" test were utilized as bivariate analysis techniques while logit regression was the multivariate analysis method employed.

SIGNIFICANT FINDINGS AND CONCLUSIONS: Regular source of care characteristics had the most influence on whether or not someone would be a repeat user of Urgent Care. One of these characteristics, identification of a Park Nicollet Medical Center physician as the person's regular source, suggested that Urgent Care may not be functioning as the organization originally intended.

RECOMMENDATIONS: Steps should be taken to insure that the original intent of Urgent Care within the organization is being fulfilled. Education of both employees and users of Urgent Care would be a logical first step. Along with this action the organization should consider further research to determine if Urgent Care is the preferred method of achieving the provision of convenient medical care for present and future users.

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Preface

If the United States experiences an over supply of physicians as experts now predict, new opportunities will be sought to keep these highly trained individuals gainfully employed. One such opportunity that has been in existence since 1973 but has only achieved national notoriety within the last couple of years are the convenience clinics i.e. Minor Emergency Clinics, Freestanding Emergency Centers, Urgent Care Centers. These operations, patterned after the fast food restaurant concept, seek to provide medical care for non-life threatening conditions whenever and almost wherever a consumer might need it.

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repeat use will provide valuable information to management in an evaluation of Urgent Care.

The conduct of this study could not have been accomplished without the invaluable assistance of my thesis advisor, Ira Moscovice, Ph.D. without his encouragement, critical review of progress reports, and insightful suggestions the study would not have been possible. I would further like to acknowledge the contributions of Mr. James Stolhanske, Dr. Paul Batalden, Mr. Gary Van House, Mr. Leo Chancellor, Mr. Paul Casper, and Jilene Baird whose organizational support made the data acquisition and report possible.

In acknowledging the invaluable support of the above individuals, the author does not intend to transfer to them the burden of responsibility for the findings and conclusions of this report. Responsibility for the entire content of this study rests solely with the author.

Finally, a very special thanks must be given to Myrna, the author's wife, for the sacrifices, prayers, encouragement, help, and love shown during this period of time.

CHAPTER I

INTRODUCTION

A. INTRODUCTION AND PURPOSE

Although the Urgent Care Center concept is not new, it has only been in the last three to five years that this delivery mechanism has flourished. Many organizations decided to incorporate Urgent Care into their provision of services because they were concerned about competition and the rising cost of providing health care. Multi-specialty group practices which developed Health Maintenance Organizations (HMOs) were particularly concerned with health plan expenditures for emergency services and viewed Urgent Care Centers as a means of bringing these expenditures under control. These organizations also discovered that a large segment of the population does not identify with a regular source of health care. By establishing Urgent Care Centers and providing convenient access to care they believed their overall market share would increase.

The Urgent Care Center (UCC) was designed to provide convenient, no appointment, and reasonably priced medical care (reasonable when compared to an emergency room). In the group practice environment, the UCC was especially intended for one time users, who were not part

of the organization's normal constituency, in order to increase market share. Management hoped that these consumers would receive a favorable first impression from this contact and decide to affiliate with the organization. Once such a decision was made the new member would be assigned to a regular physician who the organization believed would continue to provide the member with convenient, accessible care of a more comprehensive nature. The provision of this continuing, comprehensive care was designed to result in a healthier member and hopefully reduce health care costs. The Urgent Care Center was also intended as a lower cost, extended hour alternative to the emergency room for non-life/limb threatening conditions encountered by members. Again, using the center in this way was supposed to reduce costs. Both of these alternatives were quite acceptable to management and other non urgent care physicians within the organization.

However, the use of the Urgent Care Center on a recurring basis by regular constituents for non-urgent problems was another story. The Urgent Care Center staff because of their desire to keep waiting time to a minimum was unable to offer comprehensive assessments of the user's overall health but had to focus attention only on the present complaint. Without such comprehensive assessments, a preventable health problem could go undetected for an extended period of time and when finally discovered require expensive intervention. Such situations have the potential of increasing not only the organizations' operating expenses but the cost of the health care delivery system as a whole.

Therefore, the author designed this study with the intention of determining what characteristics are associated with repeat users of

an Urgent Care Center. From this information, it would be possible to determine whether or not Urgent Care is being used as the organization intended.

B. LITERATURE REVIEW

1. HISTORY AND DEVELOPMENT OF URGENT CARE

Urgent medical care is defined by the Rhode Island Department of Health as, "initial and interim medical and/or surgical services provided by or under the supervision of a licensed physician to patients whose condition requires a critical or urgent response, which may include urgent primary care but usually no continuing care."

Urgent Care Centers for the express purpose of delivering this critical or urgent response began operation in 1973, however, the idea did not evoke national interest until the early 1980's when a series of different occurrences fueled a rapid rise in Urgent Care Center (UCC) development.

a. The federal government, third party payers, and consumers began to demand less costly forms of medical treatment. (Schiffres, 1983)

b. The United States population grew and began to emigrate, in greater numbers, to the suburbs making it difficult for more traditional methods of health care delivery e.g., hospital emergency rooms to adequately service health care requirements. This population trend, in particular, helped create the need for innovative methods of health care delivery which included the Urgent Care Center concept.

c. More occupations were requiring a mobile lifestyle which meant that less consumers were able to establish regular relationships with primary care physicians, another key factor in the development of an innovative health care delivery mechanism right for people with a mobile lifestyle.

d. Another factor contributing to the influx of Urgent Care Centers was the rising number of physicians entering the marketplace and analysts' forecasts of an oversupply. These graduating professionals began to realize that the traditional settings available for medical practice were not going to be sufficient to keep everyone gainfully employed. (Friedman, 1982)

e. The Urgent Care Center boom was also fueled by the change in payment mechanisms for rendering health care. These changes made the provision of health care in a less regulated, less capital intensive environment quite attractive. (Washington Report, Perspectives - 26 Mar 84).

f. Finally, the development of a new generation of consumers seeking care at their convenience brought about the rapid growth of the Urgent Care Center concept. (Groves, 1984)

The above factors deal with Urgent Care in general but some of the specific reasons governing Group Practice or Health Maintenance Organization interest in this concept were:

- Convenience of expanded hours to existing practice.
- Increased capture of unassigned private patients.
- Marketable service to insurance companies by cost competition with emergency departments.
- Increased marketability to employer coalitions and consumer-group PPOs.
- Increased profile and reputation in the community.
- Increased share of the market.
- Increased indirect revenue through ancillary services, follow-up patient capture, and hospital admissions.
- Reduced emergency medical service patient costs.
- Greater utilization control for outpatient services and especially, hospital admissions. (Groves, 1984)

However, determining whether or not Urgent Care was the preferred method of providing for these factors, especially expanded hours for rendering care was a significant consideration for management. Since most group practices already emphasized customer satisfaction as part of their charter, the need for expanded hours could also have been met by extending existing departmental hours. The advantage of this approach, to the consumer, is the element of continuity, being seen by a provider who is already aware of his/her medical history. This type approach could assist the organization in its health maintenance goal and help reduce system costs. It would increase operating costs but probably not as much as the development of a separate department. The

one area which extended department hours does not address is convenient access for consumers who are not already part of the system. If this happens to be a significant number, the increase in market utilization may outweigh the development costs.

All of these factors helped contribute to the phenomenal growth of Urgent Care which has occurred within the last five years. This growth is evident from Table 1-1 which shows the projected number of Ambulatory Care Centers, which includes Urgent Care Centers, through the year 1990. Such figures support the idea that Urgent Care has been and will continue to be a successful endeavor. Further evidence is the fact that revenues generated by Urgent Care Centers are projected to be between $2 and $2.5 billion by 1990. (Washington Report, Perspectives, 26 March 1984)

TABLE 1 - 1

PROJECTED NUMBER OF FECs, PATIENT VOLUMES AND TOTAL REVENUES, 1983 - 1990

YEAR	NUMBER FECs	PERCENT INCREASE FROM PREVIOUS YEAR	PATIENT VOLUME PER YEAR		DOLLAR VOLUME PER YEAR (in millions)	
			PROJECTION A	PROJECTION B	PROJECTTION A	PROJECTION B
1983	1,100	83.3%	11,550,000	9,360,000	$485.1	$393.1
1984	1,900	72.7%	19,950,000	14,340,000	837.9	602.3
1985	2,500	31.6%	26,350,000	20,070,000	1,102.5	842.9
1986	2,900	16.0%	30,450,000	25,950,000	1,278.9	1,089.9
1987	3,300	13.8%	34,650,000	33,660,000	1,455.4	1,413.7
1988	3,700	12.1%	38,850,000	42,050,000	1,631.7	1,785.0
1989	4,100	10.8%	43,050,000	51,540,000	1,808.1	2,164.7
1990	4,500	8.9%	47,250,000	61,390,000	1,984.5	2,578.4

NOTES:

- Projection A assumes an average of 10,500 patient visits per year per FEC.
- Projection B assumes new FECs require three years to achieve 10,500 patient visits per year; once 10,500 level is achieved, volume increases at 20% per year until 18,000 visits per year is reached; after 18,000 growth rate remains at 4% per year.
- Dollar volume projections are in current dollars and assume a $42 average charge per patient visit.

SOURCE: The FEC Factor: A Rapid Growth Health Care Alternative. The above table was published in a special edition of Emergence dated June 1983, which is the official publication of the National Association of Ambulatory Care Centers.

2. WEAKNESSES OF TRADITIONAL DELIVERY MECHANISMS

Prior to the Urgent Care concept, hospital emergency rooms had traditionally been a major site for the delivery of emergency and ambulatory care. (Ferber, 1983) However, one of the weaknesses of emergency rooms was their failure to adequately assess and meet the needs of the consumers using their services. Often, inpatients would receive priority in the various ancillary departments of the hospital creating significant delays for emergency room patients in the completion of treatment. Also, emergency rooms generally treat the most ill customer first. (Richards, 1984) As patients arrive a nurse or technician accomplishes initial triage and if the consumer just arriving is perceived to be more ill than others who have been there longer he/she goes to the front of the queue. Both of these conditions mean that when someone uses the emergency room he/she has no idea how much time the encounter will take.

Another statistic regarding emergency room use shows that 70-85% of the visits are for non-urgent conditions. (Schroeder, 1979) This occurs because consumers value the convenience of 24-hour access, especially those who have just moved or are on vacation. However, this same article points out that emergency room use for routine care may be inappropriate for two reasons. "First, the episodic nature and lack of systematic follow-up of routine problems in emergency rooms may not result in good quality care." (Schroeder, 1979) Only 25% of patients with non-urgent gastrointestinal symptoms in two Baltimore Hospital emergency rooms received adequate management and compliance instructions which are essential for optimal care. The second reason that the ER may be inappropriate is economic. Routine care in this

setting is very expensive. (Schroeder, 1979) In the past, third party payers helped mask this expense to the consumer but now that insurers are passing on more of the costs in the form of copayment/cost sharing these expenses are becoming unacceptable to the consumer.

Hospitals realizing their dilemma established outpatient departments to combat some of the problems. However, these departments had many of the same weaknesses of the ER as well as a few of their own. The staffing was made up of rotating physicians, in training, who had many other responsibilities often creating longer waits in the outpatient department than in the emergency room. It still was quite evident that hospitals were not placing enough emphasis on consumer wants and needs.

George Caldwell, President, Lutheran General Hospital, Park Ridge, Illinois states that, "Health Care operated outside the economic system and chose to ignore a major movement in this nation: consumerism." (Friedman, 1982) As a result, physician entrepreneurs and other developers recognized that this new generation of consumers would not tolerate the "old system" and they established Freestanding Emergency Centers/Urgent Care Centers designed with the needs of consumers in mind. (Groves, 1984) The success of this new delivery mechanism can be traced to its efforts at providing consumer oriented care.

3. THE URGENT/EMERGENCY CARE CENTER

The first privately owned, non-hospital affiliated emergency center was opened in 1973. It was designed to provide, "minimum

episodic care for routine or minor problems of an urgent nature e.g. sore throats, sprains, lacerations requiring stitches, simple fractures, childhood illnesses, colds, and influenza." (Moxley and Roeder, 1984) The term episodic in the above explanation means separate, loosely connected occurrences and implies that the occurrence is limited in duration. (Webster's) Therefore, most Freestanding Emergency Centers/Urgent Care Centers discourage clients with life/limb threatening conditions from seeking care at such facilities. Consumers in this category are most appropriately treated in a hospital emergency room which is staffed and equipped to treat life/limb threatening conditions.

Physician entrepreneurs and other developers of Urgent Care Centers have made a concerted effort to match their center's resources and capabilities with the needs and demands of consumers. (Ferber, 1983) The result has been Urgent Care Centers in locations easily accessible from major traffic arteries and close to sources of public transportation, if available. Centers are also planned so that consumer travel time is reduced either by being located in the neighborhood or in a spot which is frequented by its users, e.g. a shopping mall. Some of the centers located in shopping malls add to customer convenience by providing a pager so the customer is able to shop in the mall while waiting to be seen. (Katz, 1983) The Urgent Care Center's hours of operation were established in accordance with consumer preferences so that treatment times would be convenient for users. The evening and weekend hours were especially attractive to groups, e.g. two income families, business executives who were unable

to conveniently take time out of their busy schedules during the day to receive medical attention. (Eisenberg, 1983)

Another area which Urgent Care Centers specifically addressed was long waiting times. Whereas hospital emergency rooms generally saw the most ill consumer first based upon perceived severity, the Urgent Care Center was able to see consumers on a first come, first serve basis. (Richards, 1984) The results meant that consumers were better able to judge their waiting time because they would always be aware of their position in the waiting line and could be assured that unless a life/limb threatening situation occurred, which happens infrequently, they would be treated in order. (Schaffer, 1984) Also, the Urgent Care Center staff was making a concerted effort to reduce the total waiting time. Both of these factors demonstrated tangible concern for the consumers' time. This aspect takes on even greater significance since waiting time was identified in a 1983 study as the second most common complaint with regard to recent health care experiences (O'Malley et al, 1983)

In keeping with the consumer theme, Urgent Care developers attempted to create a more aesthetically pleasing environment for the wait and delivery of care. Waiting areas contained comfortable seating, convenient access to public restrooms, and colorful decorations in contrast to the sterile atmosphere of a hospital emergency room.

Finally, the Urgent Care Center strove to reduce the cost of providing convenience care. Because it is not hospital affiliated the requirements of the Joint Commission on Accreditation of Hospitals for special emergency equipment and backup personnel were nonapplicable.

(Gerberding, 1983) The costly Certificate of Need (CON) process generally did not apply. Also, personnel were cross-trained to minimize standby operating costs. These factors significantly reduced development and operating costs allowing the average Urgent Care Center to charge much less than a hospital emergency room (Emergence, June 1983) Someone who possesses insurance may argue that his/her personal cost cannot get any lower, however, even if insurance covers the bill, making the consumer price insensitive, the high cost of medical care is ultimately born by him/her in the form of higher insurance premiums and/or taxes. (Schroeder, 1979) Therefore, a mechanism that can lower the cost of health care is very attractive.

The Urgent Care Center costs approximately the same as a regular physician's office visit which means it is not reducing the health care bill for consumers who previously went to physician offices. However, the Urgent Care Center offers many convenience features which are not available in the office environment e.g. no appointment care, extended hour care and it is evident from the literature that consumers would even pay a premium for these conveniences. (Punch, April 1984) Credence is added to this point when the reader realizes that whether or not insurance covers Urgent Care people are using it and, in fact, 50 percent of the visits to Urgent Care are paid for out-of-pocket. (Washington report on Medicine and Health, 26 March 1984)

4. POTENTIAL CLIENTELE

The potential users of this delivery mechanism come from a variety of areas. Those involved in the development of the centers expected users to be between 25 and 44 years of age, with an above average

education, and more affluence than the average health care consumer. (Castor, 1984) This expectation was based upon several factors:

a. Members with the above characteristics have a tendency to keep abreast of current events in all areas of society. Therefore, they would have a higher probability of knowing about the Urgent Care concept and its attributes.
b. Affluence suggests a measure of flexibility or mobility making the establishment of a regular physician source more difficult and increasing the opportunity of using an innovative health delivery mechanism.
c. Younger consumers are more receptive to changes in tradition.
d. Finally, members of this group place a higher premium on their time than the average consumer making them unwilling to accommodate needless delays.

A second group were consumers with a regular physician who developed an illness or suffered an injury and were unable to reach that physician because his/her office was closed or he/she was on vacation. Developers believed this group would use the Urgent Care Center *because of its convenient location.* Distance, especially in the case of minor trauma or injury becomes a very important consideration in the decision regarding where to seek treatment. (McGuirk and Porell, 1984)

Another group of consumers who might utilize Urgent Care Centers are those whose conditions previously went untreated. Members of this group did not have regular physicians and believed their condition was not serious enough for treatment in an emergency room. (Ferber, 1983) The Urgent Care Center provides a more neutral option than previously available and may cause many of this group to seek medical attention.

Business executives and families with children where both parents are employed, find the availability of evening and weekend care a necessity to prevent loss of income and valuable time out of the work

day. Therefore, Urgent Care use among these groups should be very high.

One other aspect of Urgent Care worth noting is the view by some authorities that men will tend to be the primary users of Urgent Care when seeking treatment for themselves. Due to the nature of their medical complaints, women in general, prefer being seen by someone they do not consider a perfect stranger. Some women in executive positions or running a household may find it necessary to use Urgent Care but at least one expert contends it is not the preferred choice. (Eisenberg, 1983) Children also are less likely to be seen in the Urgent Care Center because parents generally perceive that Pediatricians are better prepared to treat childhood difficulties. Therefore, among Primary Care specialties the Urgent Care Center seems to be less of a threat to Pediatrics and OB/GYN. In fact, at Park Nicollet Medical Center the Pediatrics Department, is providing extended hours of care and helping train Urgent Care Physicians in the treatment of Pediatric patients. This approach gives credence to the fact that the organization believes the treatment of children requires special attention. Most men are still inclined to get their medical needs taken care of at the most convenient place possible.

5. POTENTIAL DIFFICULTIES WITH URGENT CARE

Several groups have raised questions about the need for Urgent Care and what kind of impact this delivery mechanism is having on the overall health care system. The fact that Urgent Care Centers generally operate under the auspices of the physician's license, freeing them from strict regulatory controls has some members of the medical community alarmed. The concern is over what kind of care will be

given to the consumer. They argue that regulations allow the consumer to expect a certain minimum level of care which is necessary if someone will not be treated on a recurring basis. However, as long as the customer is satisfied is there a need for such regulation and added cost?

Also some groups, especially the American College of Emergency Physicians (ACEP), believe the word Emergency or Urgent in the clinics' name is misleading and poses a potential hazard to the consumer. However, in a study of Washington State Urgent Care Centers, less than two people per facility per year required immediate life saving intervention. (Schaffer, 1984) Such a statistic seems to make these groups' level of concern unjustified.

Another expressed concern deals with the appropriate use of Urgent Care. Physician staffing is provided by emergency or family practice trained individuals. The emergency physicians are exceptional with trauma and major illnesses but are not trained for comprehensive patient assessment nor is it really appropriate in the Urgent Care setting. Family physicians are well-trained in providing comprehensive assessment but in an environment where decreasing wait time is a prominent goal such assessments are impractical. Therefore, there is concern that diseases whose early detection can save thousands of dollars in health care costs will not be discovered and the cost of health care to everyone increased. Since Urgent Care Centers are still very new, data to substantiate this concern is not yet available.

A related concern about staffing deals with maintaining proficiency levels especially in the area of emergency medicine. Another

concern is how to maintain professional stimulation of those physicians who want to practice emergency medicine. Some physicians began Urgent Care Centers because of the constraints imposed by hospital emergency departments. If Urgent Care Centers become regulated and begin to require some of the same practices as emergency rooms, how will these physicians maintain their professional stimulation and what effect will it produce on the patients being seen at the Centers?

One affect according to the National Association of Freestanding Emergency Centers will be the addition of approximately $200,000 of unnecessary annual cost and a subsequent reduction in the growth of the industry. (Washington Report on Medicine and Health, 26 March 1984)

The final potential difficulty mentioned in the literature is over whether or not repeat use in the Urgent Care Center is acceptable. One expert contends that it will take repeat use by satisfied customers to make the Urgent Care Center profitable. (Punch, April 1984) Even with repeat use, Carl Sherman, a health care industry analyst with Oppenheimer and Company, estimates it will take four years for a center to become profitable. (Punch, May 1984) These assertions would indicate that repeat use, for financial reasons, is quite desirable. Yet, in a multi-specialty group practice the Urgent Care Center has not been established to provide continuing care. It acts as a feeder mechanism, an overflow valve for the rest of the organization, and a lower cost alternative to emergency room visits. (Groves, 1984) With these factors in mind it becomes imperative to determine if Urgent Care can pay for itself and still meet these

objectives. The study results which follow will provide some insight in this area.

C. HYPOTHESES

Given the fact that Urgent Care Centers have been in existence for over ten years, it is surprising that more research regarding consumer behavior has not been accomplished. There are conflicting opinions about appropriate use and yet, I could not locate a good model which had been developed to determine the specific characteristics of one time users or those who choose to use the centers repeatedly. It is particularly relevant in a multi-specialty group practice to know the underlying characteristics of people using the Urgent Care department to insure that this is an appropriate vehicle for delivering service to them.

Specific hypotheses have been formulated around the research question which asks, what variables best explain and/or predict those consumers most likely to utilize the Urgent Care Center more than once?

The variables identified in the literature and chosen for use as independent variables were the following:

CONSUMER DEMOGRAPHIC CHARACTERISTICS

- Age
- Sex
- Distance from the Urgent Care Center

REGULAR SOURCE OF CARE CHARACTERISTICS

- Regular PNMC Physician
- Regular Physician not with PNMC
- Attempt to Make an Appointment

CONSUMER EXPECTATION CHARACTERISTICS

- Expected Waiting Time
- Expected Cost Compared to Regular Physician's Office
- Expected Cost Compared to an Emergency Room
- Use of an Urgent Care Center for Major Emergencies

Specific codes and definitions of individual variables will be discussed in the next chapter. Each of the variables will be tested for inclusion in the model to answer the primary research question: Which variable or combination of variables best explain whether or not a consumer will chose to use the Urgent Care Center More Than Once? Each hypothesis will be stated in its working form.

AGE

Working Hypothesis: As age increases the proportion of consumers utilizing the Urgent Care Center More Than Once decreases.

Rationale: The literature states that consumers between the ages of 25 and 45 will be the primary users of Urgent Care. Members of this group tend to have more mobility than any other group making it more difficult to identify with a regular provider. This factor provides them with more opportunities to seek care in a non-traditional setting. It also provides them the freedom to continue using the Urgent Care Center for all their health care needs. Consumers with an established primary care physician relationship have less opportunity and are more reluctant to try something new and innovative. These consumers are generally in the older, above 45, age group.

SEX

Working Hypothesis: The proportion of males utilizing the Urgent Care Center More Than Once will be greater than the proportion of females.

Rationale: The literature (Eisenberg, 1983) suggests that men are more likely to use the Urgent Care Center. The contention is that due to the nature of their medical conditions women prefer to be examined by physicians with whom they have established a regular physician-

patient relationship. Such a relationship is very difficult to establish in the Urgent Care environment which is the reason it is suggested women will be less likely to use the Urgent Care Center. And, if they are less likely to use it the first time then repeat use should also be less than for the males.

DISTANCE FROM THE URGENT CARE CENTER

Working Hypothesis: As the distance a consumer has to travel to reach the Urgent Care Center increases, the proportion of consumers who use the Urgent Care Center More Than Once decreases.

Rationale: Distance from a treatment source is rapidly becoming one of the major considerations in where to go especially in the case of injuries (Richards, 1984; Eisenberg, 1983, Punch, 1984) Therefore since this is such an important part of the decision process it follows that the further someone has to travel the more inconvenience experienced and the greater the probability of not returning. This means that as distance from the Urgent Care Center increases, repeat visits decrease.

REGULAR PHYSICIAN WHO IS PART OF THE PARK NICOLLET MEDICAL CENTER ORGANIZATION

Working Hypothesis: As the proportion of users with regular PNMC physicians increases, the proportion of consumers who use the Urgent Care Center More Than Once decreases.

Rationale: According to the literature, someone with an established primary care type physician relationship will usually only use an Urgent Care Center when his/her regular physician is unavailable and care can not wait. With the group practice already emphasizing

customer satisfaction it appears quite reasonable to conclude that repeat care among this group is reduced.

A REGULAR PHYSICIAN NOT WITH PNMC

Working Hypothesis: As the proportion of consumers with a regular physician who is not with PNMC increases, the proportion of consumers who use the Urgent Care Center More Than Once decreases.

Rationale: Again, the literature indicates that this group would be classified as the light users of Urgent Care because of their existing regular physician relationship. Also, providers who are not part of the group practice would be concerned about losing patients and attempt to suggest other alternatives to their constituents. These factors should decrease repeat use in this category.

AN ATTEMPT TO GET AN APPOINTMENT WITH A PHYSICIAN

Working Hypothesis: As the proportion of consumers who attempted to get an appointment with a regular physician increases, the proportion of consumers who use the Urgent Care Center More Than Once decreases.

Rationale: A consumer who already identifies with a regular source of medical care, unless they are dissatisfied, will tend to only use an Urgent Care Center for those conditions which cannot wait for an available appointment. In today's competitive environment it is highly unlikely that such occurrences will happen very frequently.

EXPECTED WAITING TIME AT THE URGENT CARE CENTER

Working Hypothesis: As the proportion of consumer's who expect waiting time to be 15 minutes or less increases, the proportion of consumers who use the Urgent Care Center More Than Once also increases.

Rationale: Waiting time was identified as the second most common complaint among consumers using the Health Care Delivery System. (O'Malley et al, 1983) Since one of the major attractions being marketed by the Urgent Care Center is reduced waiting time, consumers making this complaint should be attracted. If the Urgent Care Center delivers on its claim, the consumer's likelihood of repeat use is increased.

EXPECTED COST OF AN URGENT CARE CENTER VISIT COMPARED TO A REGULAR PHYSICIAN'S OFFICE VISIT

Working Hypothesis: As the proportion of consumers who expect the cost of a visit to the Urgent Care Center to be about the same or less than a regular office visit increases, the proportion of consumers using the Urgent Care Center More Than Once also increases.

Rationale: The literature suggests that the Urgent Care Center is better equipped for diagnosis and treatment of non-emergent conditions and minor trauma than most physician offices. Therefore, it is more efficient to receive care and treatment at one complete center and if the cost is the same or less repeat use would appear to be a natural consequence.

EXPECTED COST OF AN URGENT CARE VISIT COMPARED TO AN EMERGENCY ROOM VISIT

Working Hypothesis: As the proportion of consumers who expect the cost of a visit to the Urgent Care Center to be less than an emergency room visit increases, the proportion of consumers using the Urgent Care Center More Than Once also increases.

Rationale: Urgent Care was designed to provide many of the convenience features of an emergency room only for non-emergency

conditions. If it can do that while at the same time reducing the cost then repeat use will result.

ANTICIPATED USE OF THE URGENT CARE CENTER FOR LIFE/LIMB THREATENING CONDITIONS

Working Hypothesis: As the proportion of consumers who indicate that they would use the Urgent Care Center for a life/limb threatening condition increases, the proportion of repeat users also increases.

Rationale: If someone is presently using the Urgent Care Center and indicates that he/she would use it for life/limb threatening conditions, then it is clear that this would promote repeat use. It also suggests that the consumer is using Urgent Care for anything/ everything which further supports the idea of repeat use.

CHAPTER II

METHODOLOGY

A. STUDY DESIGN AND CONCEPTUAL MODEL

The study was designed as a comparison between One Time and Repeat Users of the Urgent Care Center. Since the Urgent Care Center involved is associated with a multi-specialty group practice the scope of the study focuses on what is occurring in this type of setting. The author became interested in studying Urgent Care during his summer residency at Park Nicollet Medical Center. The concept of Urgent Care seemed quite attractive from a consumer's standpoint but it was not clear what benefit the organization was receiving. Therefore, the author received approval to attempt to find out why consumers were choosing to use urgent care. This original intent was somewhat altered when it was learned that data already existed that could be used to differentiate characteristics of one time users from repeat users. By focusing on this issue, the author was also able to evaluate the circumstances under which repeat use occurred. Such information would prove very useful to organization management in its evaluation of what impact urgent care, specifically repeat use, was having on the entire organizational structure.

After reading the Urgent Care Division proposal, it became quite evident that the urgent care center was not designed for providing continuous care which in this study equates to repeat use. Therefore, the author developed a model to address the following question: Are the consumer demographic, regular source of care, and consumer expectation characteristics associated with repeat users of the urgent care center significantly different from those consumers who have only used it once?

The conceptual model used in the study can be specified as follows:

$$\text{Repeat Use of the Urgent Care Center} = f\left[\begin{array}{l}\text{Regular Source of Care, Patient} \\ \text{Demographics, and Consumer} \\ \text{Expectation Characteristics}\end{array}\right]$$

Regular Source Characteristics

- Identification of a Regular Physician who is part of the Park Nicollet Medical Center (PNMC) Organization.
- Identification of a Regular Physician who is not part of the PNMC organization.
- An attempt to make an appointment with a regular physician before coming to the Urgent Care Center.

Patient Demographics Characteristics

- Age of the consumer to the nearest whole year.
- Sex of the respondent.
- Distance travelled in order to reach the urgent care center (used respondents reported zip code as an estimator).

Consumer Expectation Characteristics

- Expected waiting time at the urgent care center before being treated.
- Expected use of the urgent care center for a life/limb threatening condition.
- Expected cost of the urgent care visit compared to a regular physician office visit.
- Expected cost of the urgent care visit compared to a hospital emergency room visit.

B. THE STUDY SITE

Information used to conduct the research originally came from users of the Park Nicollet Medical Center (PNMC) Urgent Care Center in St. Louis Park. At the time of data collection PNMC was a 231-member, multi-specialty group practice. The specific Urgent Care Center where the data was collected has been in operation since March 1982 and now sees well over 500 patients per week. It operates approximately 13 hours per day, seven days per week from 8:00 A.M. until 9:00 P.M.

Since 1982, either by development or merger, the PNMC organization has added three more Urgent Care Centers and in May 1984 formulated a proposal for the development of an Urgent Care Division to standardize the overall operation of Urgent Care Centers within the organization.

C. SAMPLE SELECTION AND DESCRIPTION

Even before the initiation of this research study, PNMC had been very interested in its urgent care centers. Plans had been finalized and a Division of Urgent Care incorporated. Also, PNMC had been collecting information from urgent care users for a variety of analytic purposes. Some of this information which was already available the author was able to utilize in his analysis of characteristics governing repeat use of urgent care.

When determining how large a sample was needed, for the original data collected, the author calculated that a sample size of 400, with a dichotomous dependent variable, would be adequate for estimating 95% confidence intervals for the variables of interest. The next issue revolved around the time period for sampling. After discussing this issue with the Executive Director of the Urgent Care Division and the nurse who oversees the operation, it was agreed that a sample taken

during a week where no major holidays occurred, would be representative of the overall pattern of use in the Urgent Care Center.

D. DATA COLLECTION AND PROCEDURES

The week of November 7-13 was the sampling period. A 22 question measuring instrument was developed and (See Appendix A) urgent care department personnel were trained on how to administer it. Everyone presenting to the Urgent Care Center was supposed to be given the opportunity to answer the questionnaire and a notation made for anyone who did not complete the questionnaire because he/she was too sick or refused. These notations were supposed to form the basis of any required non-respondent analysis.

A total of 577 patients were seen in the Urgent Care Center during the week. Of this amount, 283 responded to the questionnaire. Therefore, respondents and non-respondents were compared to determine if there were significant differences between the two groups.

E. NON-RESPONDENT ANALYSIS

As was mentioned in the previous section, a method for identifying non-respondents was incorporated into the data collection process. Unfortunately the established procedures were not completely adhered to by the departmental staff and only about eight non-responses were identified. However, after comparing the total weekly visits with the number of completed questionnaires it was discovered that many more than eight users had not completed a questionnaire.

Realizing that it was very important to determine whether the sampled group reflected the characteristics of the overall user population another approach to the non-respondent analysis was

required. After some investigation, it was discovered that information on four separate variables was accessible on all department users for the week and these same variables had also been collected for the users who completed the survey. Therefore, the non-respondent analysis consisted of using appropriate tests to examine differences between survey respondents and all users of the Urgent Care Center during the study period.

The students "t" test statistic was used to test for group differences in the means of the continuous variable age; for the other three variables, sex, payment source, and zip code; the Chi-Square statistic was used. The results of these analyses are presented in Table 2-1.

The author found that there were no significant differences in age, sex, or zip code between the groups. However, there were significant differences ($p < .005$) in payment source. Those paying for the service out-of-pocket were underrepresented in survey respondents. It is not clear what bias, if any, is introduced by this difference.

TABLE 2-1

NON-RESPONDENT ANALYSIS

AGE
"t" - Test

Groups	Number of Users	Mean	Standard Deviation	Standard Error
All Users	578	33.6	16.7	.70
Survey Respondents	283	33.5	15.3	.91

T Value	Degrees of Freedom	2-Tail Prob.
-.16	859	.87

SEX
Chi-Square

Groups	Male	Female	TOTAL
All Users	262	315	577
Survey Respondents	123	159	282
TOTAL	385	474	859

$X^2 = .25$ df = 1 p = .62

TABLE 2-1 (Cont.)

CHI-SQUARE
PAYMENT SOURCE

Groups	Survey Respondents	All Users	TOTAL
MedCenter Health Plan	184	351	535
Blue Cross/ Blue Shield	15	10	25
Medicare/Medicaid	8	17	25
Other Insurance	50	23	73
Out-of-Pocket	23	176	199
TOTAL	280	577	857

$X^2 = 92.12$ df = 4 p = .0005

CHI-SQUARE
ZIP CODE

Groups	Survey Respondents	All Users	TOTAL
0 - 2 miles	123	246	369
_ 2 - 5 miles	107	209	316
_ 5 miles	46	122	168
TOTAL	276	577	853

$X^2 = 2.39$ df = 2 p = .30

F. ANALYTIC TECHNIQUES USED

The data were analyzed through the use of the computer program, Statistical Package for the Social Sciences (SPSS). Initially, frequency distributions were used to insure that collected data were complete, for the establishment of useable cases, and to assist in categorizing the variables.

To test the null hypothesis for each nominal or dichotomous variable, which generally states that there is no difference in the independent variable as it relates to the dependent variable, the Chi-Square statistic was utilized. Comparisons between the independent nominal and ordinal variables and the dependent variable were accomplished through the use of cross tabulations. The Chi-Square statistic is not a measure of association, it is sufficient to test for association, whether the variables are independent or related. (Babbie, 1983)

Along with the measures of association, a multiple regression technique was used to estimate an equation for predicting the probability of repeat urgent care use. Selecting the appropriate method for this analysis related to the measurement of the dependent variable which was dichotomous only taking on values of 0 or 1. Standard linear regression techniques, with their underlying assumptions of normality, are not appropriate for this case. Logistic Regression, which specifically accounts for the discrete nature of the dependent variable, was the multivariate approach used to analyze the data.

G. STUDY LIMITATIONS

Although the study analyzed data on patient demographics, regular source of care, and consumer attitudes for those who Use the Urgent

Care Center More than Once, collection of some other pertinent information could have strengthened the study. These additional data include:

1. Time of day that the Urgent Care Center was used.
2. Time frame associated with previous Urgent Care Use.
3. How the consumer viewed his/her physical condition.
4. Consumer level of education.
5. Consumer employment status.
6. Number of minor children living at home.
7. Causes of dissatisfaction with other health care providers.

Sources of referral to Urgent Care may also be an important variable; however, we did not achieve an adequate response rate for this question and could not include it in the analysis. It may have been important in attempting to determine employee attitudes toward urgent care and helping to assess any access difficulties with other departments.

Finally the non-respondent analysis indicated that payment source appeared to play a meaningful role in differentiating those who answered or did not answer the questionnaire. This suggests the use of caution in generalizing the findings to all users of the urgent care center.

CHAPTER III

PRESENTATION AND ANALYSIS OF DATA

A. UNIVARIATE AND BIVARIATE RELATIONSHIPS

1. UNIVARIATE ANALYSIS

Table 3-1 summarizes the descriptive characteristics of the variables used in the study.

Fifty-seven percent of those sampled were repeat users of urgent care while 43% of the sample were using the Urgent Care Center for the first time. The fact that the sample proportions were so close together increased the author's confidence that a meaningful differentiation between groups was possible.

Other information that is important in describing the sample includes:

- The average age for users was 34 years.
- Forty five percent of the users attempted to make an appointment with a regular physician before using the Urgent Care Center.
- Fifty four percent of the sample indicated that they identified a physician from Park Nicollet Medical Center as their regular physician.
- Slightly more than eleven percent of the sample indicated that they had a regular physician who was not associated with Park Nicollet Medical Center.

- A higher proportion of users than the author would have anticipated, almost 19%, indicated they would use the Urgent Care Center for a life/limb threatening condition.

- Approximately 25% of the users who indicated that they had been referred to the Urgent Care Center were referred from a receptionist within Park Nicollet Medical Center. If referrals from Park Nicollet Medical Center physicians are included it shows that almost one-third of the referrals to the Urgent Care Center come from Park Nicollet employees. Unfortunately, further analysis relating this variable to repeat use was not possible because of an excessive number of missing cases.

- A majority of the users, 54%, expected a visit to the Urgent Care Center to cost about the same as a visit to a regular physician's office. They also, by a margin of three to one, expected the Urgent Care Center to cost less than a visit to an emergency room. These results indicate a price awareness that the author did not believe was present in the group practice environment because of the insulation from actual charges.

- Whereas the author and the literature indicated that men would utilize Urgent Care more than women, the raw percentages show that in this Urgent Care Center a majority, 56.5%, of the users were female.

- The raw data indicates that approximately 84% of the users of Urgent Care live within a five mile radius.

- Urgent Care is marketed, in general, as a convenient provider of medical attention which includes reduced waiting time. This fact was verified in the PNMC Urgent Care Center.

- The source of payment variable indicates that close to 66% of the respondents were associated with the MedCenters Health Plan which means that only 34% of the respondents, at most, could be coming from outside the organization. This result may indicate that the urgent care center is not being perceived as the convenient entry point to PNMC that it desires.

- Another interesting statistic reveals that 55% of the repeat users of Urgent Care did not attempt to make an appointment with a regular source before coming to the urgent care center. Couple this statistic with the one that indicates 66% of the sample belonged to MedCenters Health Plan and there is a basis for concluding that the urgent care center is functioning as a substitute for other regular sources of care with PNMC.

TABLE 3-1

Summary of Sample Characteristics (N = 283)

Characteristic	Measured Used In Model	Mean	SD	Range
Age	Actual Age Reported	34.0	15.3	0-91
Attempt to Get an Appointment with a Regular Physician (%)	Yes = 1 No = 0	45.2		
Regular Physician who is part of the PNMC Organization (%)	Yes = 1 No = 0	54.4		
Regular Physician who is not part of the PNMC Organization (%)	Yes = 1 No = 0	11.3		
Expected Waiting Time to be Treated in the Urgent Care Center to be 15 minutes or less (%)	0 - 15 mins = 0 > 15 mins = 1			
Used Urgent Care Center for a life/limb threatening condition (%)	Yes = 1 No = 0	18.7		
Expected Cost to visit the Urgent Care Center to be less than a regular physician office visit (%)	Less = 1 More/About the same = 0	13.4		
Expect Cost to visit the Urgent Care Center to be less than an Emergency Room Visit (%)	Less = 1 More/About the same = 0	70.3		
Male (%)		43.5		
Distance two miles or less than from the Urgent Care Center (%)	0 - 2 miles = 0 Else = 1	44.6		
Repeat Use of the Urgent Care Center (%)	Yes = 1 No = 0	58.7		

SD, standard deviation

BIVARIATE ANALYSIS

Chapter I of this study contained ten hypotheses, corresponding to the independent variables, which the author tested utilizing available data. The study compared the responses from repeat users of urgent care and those using it for the first time. These comparisons will be tested using the Chi-Square and student's "t" test statistics.

The Chi-Square statistic was used to test a majority of the variables since they were ordinal or nominal in nature. Chi-Square is only able to indicate association between variables and cannot measure the intensity of association. Nevertheless, it was able to provide the author with sufficient information to either reject or not reject the null hypothesis. A significance level of 0.05 was established as the critical value upon which a decision whether or not to reject the null hypothesis was based.

In those cases where the calculated Value of the Chi-Square was equal to or greater than the established critical value, the null hypothesis was rejected and an alternative hypothesis was considered. If the calculated value was less than the critical value, the null hypothesis could not be rejected.

The study only contained one continuous variable, age, and it was tested using the student's "t" statistic. This statistic tested the difference in mean ages between the repeat users and those using Urgent Care for the first time. Based upon this statistic, again using a critical value of 0.05, the author was able to determine whether or not to reject or not reject the null hypothesis and, as appropriate, select an alternative hypothesis.

The null hypothesis is symbolized H_o and the alternative hypothesis is represented by the symbol H_w.

a. DEMOGRAPHIC CHARACTERISTICS

1. Age

H_o: There are no differences in utilization rates based on age between consumers who have used an Urgent Care Center Before and those using if for the first time.

H_w: As age increases the proportion of consumers utilizing the Urgent Care Center More than Once decreases.

Table 3-2

STUDENT'S "T" TEST CALCULATIONS

Age

Used Urgent Care Center Before	n	Mean	Std. Dev.
Yes	166	32.8554	13.693
No	116	34.6379	17.177

Pooled Variance Estimate

T-Value	Degrees of Freedom	P-Value
-.97	280	.334

The calculated T-value of .97 is less than the critical value of 1.96 which means the null hypothesis cannot be rejected.

2. Sex of the Respondent

H_o: There is no difference between the proportion of males and the proportion of females utilizing the Urgent Care Center More than Once.

H_w: The proportion of males utilizing the Urgent Care Center More than Once will be greater than the proportion of females.

Table 3-3

CHI-SQUARE CALCULATIONS

SEX OF RESPONDENT

	Used Urgent Care Before	First Time User	Total
Male	68 (55.3%)	55 (44.7%)	123 (43.6%)
Female	92 (57.9%)	67 (42.1%)	159 (56.4%)
Total	160 (56.7%)	122 (43.3%)	282 (100%)

$X^2 = .19$ df = 1 N = 282 p = .6649

The calculated Chi-square of .19 for one degree of freedom, is much less than the critical value of 3.84 and therefore, the null hypothesis cannot be rejected. It should be noted that more females are Using the Urgent Care Center More than Once contrary to what the author hypothesized a priori.

3. Distance from the Urgent Care Center

H_o: Between the two sample groups, there is no difference in the proportion of consumers who Use the Urgent Care Center More than Once based on distance from the Urgent Care Center.

H_w: As the distance from the Urgent Care Center increases, the proportion of consumers who use the Urgent Care Center More than Once decreases.

Table 3-4

CHI-SQUARE CALCULATIONS

DISTANCE FROM THE URGENT CARE CENTER

	Used Urgent Care Center Before	First Time User	Total
0-2 Miles	68 (55.3%)	55 (44.7%)	123 (44.6%)
> 2-5 Miles	64 (59.8%)	43 (40.2%)	107 (38.8%)
> 5 Miles	27 (58.7%)	19 (41.3%)	46 (16.7%)
Total	159 (57.6%)	119 (42.4%)	276 (100%)

$X^2 = .51$ df = 2 N = 276 p = .7760

Again we discover that the calculated Chi-square of .51 is much less than the critical value of 5.99 for a p-value of 0.05 with two degrees of freedom, meaning that the null hypothesis cannot be rejected.

b. REGULAR SOURCE OF CARE CHARACTERISTICS

1. Regular Park Nicollet Medical Center Physician

H_o: There is no difference in the proportion of consumers using the Urgent Care Center More than Once between the two sample groups.

H_w: As the proportion of consumers with a Regular Park Nicollet Medical Center physician increases, the proportion of consumers who use the Urgent Care Center More than Once decreases.

Table 3-5

CHI-SQUARE CALCULATIONS

REGULAR PARK NICOLLET MEDICAL CENTER PHYSICIAN

Regular PNMC Physician	Used Urgent Care Center Before	First Time User	Total
Yes	98 (64.1%)	55 (35.9%)	153 (54.4%)
No	61 (47.7%)	67 (52.3%)	128 (45.6%)
Total	159 (56.6%)	122 (43.4%)	281 (100%)

$X^2 = 7.63$ df = 1 N = 281 p = .0058

RESULTS: The calculated value with one degree of freedom was 7.63 which is greater than the critical value of 3.84 located in the total of Critical Values of Chi-Square. Therefore, the null hypothesis is rejected. The proportion of consumers who indicated use of an Urgent Care Center Before and having a regular Park Nicollet Medical Center physician was 64% as opposed to 47% who Used an Urgent Care Center more than once but did not have a Regular Park Nicollet Medical Center physician. These trend results indicate that our alternative hypothesis is not supported.

2. A Regular Physician Not With Park Nicollet Medical Center:

H_o: There is no difference in the proportion of consumers using the Urgent Care Center More than Once between those with a Regular Physician Not With Park Nicollet Medical Center and those without.

H_w: As the proportion of consumers with a Regular Physician who is not with Park Nicollet Medical Center increases, the proportion of consumers who use the Urgent Care Center More than Once decreases.

Table 3-6

CHI-SQUARE CALCULATIONS

A Regular Physician Not With Park Nicollet Medical Center

Regular Physician Not with PNMC	Used Urgent Care Center Before	First Time User	Total
Yes	9 (28.1%)	23 (71.9%)	32 (11.8%)
No	145 (60.4%)	95 (39.6%)	240 (88.2%)
Total	154 (56.6%)	118 (43.4%)	272 (100%)

$X^2 = 11.91$ df = 1 N = 272 p = .0005

RESULTS: The calculated value of the Chi-Square with one degree of freedom is 11.91 which is greater than the critical value of 3.84 found in the Chi-Square Table. This result allows the null hypothesis to be rejected and provides the opportunity to suggest a more plausible alternative. Since the results of the raw numbers and percentages in Table 3-5 clearly shows that consumers who identify a regular physician not with Park Nicollet Medical Center do not use the Urgent Care Center More than Once we are able to accept the working hypothesis as the most plausible alternative.

3. An Attempt to Get an Appointment With a Regular Physician.

H_o: There is no difference in the proportion of consumers using the Urgent Care Center More than Once between those who tried to get an appointment with a regular physician and those who did not.

H_w: As the proportion of consumers who attempted to get an appointment with a regular physician increases, the proportion of consumers who Use the Urgent Care Center More than Once decreases.

Table 3-7

CHI-SQUARE CALCULATIONS

An Attempt to Get an Appointment with a Regular Physician

	Used Urgent Care Center Before	First Time Used	Total
Tried to get Appointment	65 (51.2%)	62 (48.8%)	127 (45.0%)
Did not try to get Appointment	95 (61.3%)	60 (38.7%)	155 (55.0%)
Total	160 (56.7%)	122 (43.3%)	282 (100%)

$X^2 = 2.91$ df = 1 N = 282 p = .0882

RESULTS: The calculated value of the Chi-Square 2.91 is less than the critical value of 3.84 for a significance level of 0.05 found in the Chi-Square Table. Since the calculated value is less than the critical value the null hypothesis cannot be rejected. However, it should be noted that the calculated value is near the critical value which may indicate that this variable requires further investigation. Based on the cell frequencies and percentages it does appear that consumers who try to get an appointment tend to have less repeat use than those who do not try to make an appointment.

c. CONSUMER EXPECTATION CHARACTERISTICS

1. Expected Waiting Time at the Urgent Care Center

H_o: There is no difference in the proportion of More than One Time Users of Urgent Care between those consumers who expect to wait in Urgent Care Centers fifteen minutes or less and those who expect to wait more than 15 minutes.

H_w: As the proportion of consumers who expect waiting time to be 15 minutes or less increases, the proportion of consumers who Use the Urgent Care Center More than Once also increases.

Table 3-8

CHI-SQUARE CALCULATIONS

Expect Waiting Time at the Urgent Care Center

	Used Urgent Care Center Before	First Time User	Total
0 - 15 Minutes	61 (61%)	39 (39%)	100 (35.6%)
> 15 Minutes	97 (53.8%)	83 (46.2%)	180 (64.4%)
Total	158 (56.4%)	122 (43.6%)	280 (100%)

$X^2 = 1.322$ df = 1 N = 280 p = .25

RESULTS: The calculated Chi-Square of 1.322 is less than the critical value for an established p-value of 0.05 which is 7.81. Therefore, based on the Chi-Square statistic the null hypothesis cannot be rejected. The frequency information contained in the individual cells indicate that 64% of the repeat users expect to wait more than 15 minutes to receive treatment. This may be an indication that the convenience message is not getting adequately presented to potential users or the reality being experienced in the Urgent Care Center is not meeting expectations.

2. Expected Cost of the Urgent Care Center

H_o: There is no difference in the proportion of consumers Using the Urgent Care Center More than Once based upon what they expect to pay for treatment in comparison to a physician's office.

H_w: As the proportion of consumers who expect the cost of a visit to the Urgent Care Center to be about the same or less than a regular physician's office visit increases, the proportion of consumers using the Urgent Care Center More than Once also increases.

TABLE 3-9

CHI-SQUARE CALCULATIONS

Expected Cost of the Urgent Care Center

Compared to a Physician's Office

	Used Urgent Care Center Before	First Time User	Total
Less	23 (60.5%)	15 (39.5%)	38 (13.8%)
About the Same	82 (53.2%)	72 (46.3%)	154 (56.0%)
More	50 (60.2%)	33 (39.8%)	83 (30.2%)
Total	155 (56.4%)	120 (43.6%)	275 (100%)

$X^2 = 1.38$ df = 2 N = 275 p = .5007

RESULTS: The calculated Chi-Square of 1.38 is less than the critical value of 5.99 from the Chi-Square Table. This result means that the null hypothesis cannot be rejected.

3. The Expected Cost of Urgent Care Compared to an Emergency Room Visit

H_o: There is no difference in the proportion of consumers Using the Urgent Care Center More than Once based upon what they expect to pay for treatment in comparison to an emergency room visit.

H_w: As the proportion of consumers who expect the cost of an emergency room visit to be more than an Urgent Care Center visit increases, the proportion of consumers Using the Urgent Care Center More than Once increases.

TABLE 3-10

CHI-SQUARE CALCULATIONS

Expected Cost of the Urgent Care Center

Compared to an Emergency Room

	Used Urgent Care Center Before	First Time User	Total
Less	120 (60.3%)	79 (39.7%)	199 (72.1%)
More/About the Same	37 (23.6%)	40 (33.6%)	77 (27.9%)
TOTAL	157 (56.9%)	119 (43.1%)	276 (100%)

$X^2 = 3.397$ df = 1 N = 276 p = .065

RESULTS: The calculated value of the Chi-Square is 3.397 which is less than the critical value of 5.99 which means that the null hypothesis cannot be rejected. However, this independent variable came close to being significant and needs to be examined in the future

because the raw data indicates that a great majority of the repeat users expect to pay less for Urgent Care than an emergency room.

4. Use of an Urgent Care Center for Life/Limb Threatening Condition

H_o: There is no difference in the proportion of consumers who use the Urgent Care Center More than Once based upon whether or not they would use it for a life/limb threatening condition.

H_w: As the proportion of consumers who indicate they would use the Urgent Care Center for a life/limb threatening condition increases, the proportion of consumers using the Urgent Care Center More than Once decreases.

TABLE 3-11

CHI-SQUARE CALCULATIONS

Use of an Urgent Care Center for Life/Limb Threatening Condition

Life/Limb Threat	Used Urgent Care Center Before	First Time User	Total
Yes	28 (52.8%)	25 (47.2%)	53 (13.9%)
No	132 (57.9%)	96 (42.1%)	228 (81.1%)
Total	160 (56.9%)	121 (43.1%)	281 (100%)

$X^2 = .45$ df = 1 N = 281 p = .5024

RESULTS: The null hypothesis cannot be rejected because the calculated Chi-Square, .45, is less than the critical value Chi-Square for one degree of freedom, 3.84. Again, the raw data indicates that a greater proportion of repeat users would not use the Urgent Care

Center for a life/limb threatening condition. However, the p-value clearly shows no significant relationship.

B. Multivariate Model - Logistic Regression Results

Logistic Regression allows us to model behavior when it is known that the outcomes are discrete. (Hanushak and Jackson, 1977). Since our dependent variable is whether a consumer has either used the Urgent Care Center Before or has not, this approach is preferable to the use of linear regression with its underlying assumptions of normality. The Logistic Regression analysis allows us to estimate the marginal changes in the probability of Using the Urgent Care Center More than Once due to the independent variables in the model. While the logits themselves are a linear function of the independent variables, the resulting probabilities are not. (Hanushak and Jackson, 1977) For continuous independent variables, the percentage change in the probability of previous use of the Urgent Care Centers can be calculated based on a 1% change in the mean value of the continuous variables. For dichotomous independent variables, the percentage change can be calculated for a shift from 0 to 1 in value of the dichotomous variable.

The following tables provide summary descriptive statistics for the independent variables used in the analysis along with the regression results.

Table 3-12, Characteristics of Independent Variables Used in the Logistic Regression

Variables	Definition	Mean	SD	Range
Age	To the nearest whole year	34.0	15.3	0 - 91 years
Sex	Identified as either male or female Male = 1, Female = 0	.56	.50	
Appt.	Whether or not a consumer tried to make an appointment with a Regular Physician before deciding to use the Urgent Care Center Yes = 1, No = 0	.44	.50	
RPMD	A regular physician who is associated with the Park Nicollet Medical Center (PNMC) Organization Yes = 1, No = 0	.56	.50	
NRPMD	A regular physician who is not associated with the PNMC Organization Yes = 1, No = 0	.11	.32	
EWT	The amount of time a consumer expected to wait at the Urgent Care Center before being treated 0-15 minutes = 1 > 15 minutes = 0	.64	.48	
MAJE	This variable was defined as whether or not a consumer would use the Urgent Care Center for a life/limb threatening condition Yes = 1, No = 0	.20	.34	

EC	How much the consumer expected the Urgent Care Center visit to cost when compared to a regular physician's office. Less = 1 About the same/More = 0	.13	.34
ERC	How much the consumer expected the Urgent Care Center visit to cost compared to an emergency room. Less = 1 More/About the Same = 0	.73	.45
DIST 1	A consumer living within two miles of the treatment location 0 - 2 = 0 Else = 1	.55	.50
DIST 2	A consumer living greater than two miles to five miles from the treatment location > 2 - 5 = 0 Else = 1	.61	.49

Table 3-13, Logistic Regression Results:
Probability of Having Used Urgent Care Center Before

Independent Variable	Coefficients (t - value)	Standard Error
Age to the Nearest whole year	-.0133 (1.44)	.0092
Sex	.0064 (.02)	.2770
An Attempt to make an appointment with a regular physician before coming to Urgent Care	-.4824* (1.74)	.2774
Identification of a regular physician who is with Park Nicollet Medical Center	.6806** (2.33)	.2918
Identification of a regular physician who is not with Park Nicollet Medical Center	-1.35*** (2.90)	.4651
Expected Waiting Time to be treated at the Urgent Care Center	-.3750 (1.32)	.2837
Use of the Urgent Care Center for a life/limb threatening condition	.1415 (.4072)	.3474
Expected Cost of an Urgent Care Visit compared to a regular office visit	.5235 (1.27)	.4134
Expected Cost of an Urgent Care Visit compared to an emergency room	.3728 (1.24)	.2993
Distance from the Urgent Care Center up to two miles	.2837 (.78)	.3625
Distance from the Urgent Care Center which is over two miles up to five miles	.2746 (.74)	.3705

Likelihood Ratio Test has a value of 25.01 with 11 degrees of freedom.

N 262

* p less than .05 ** p less than .01 *** p less than .001

First, it should be noted that the overall likelihood ratio test involving a combination of all independent variable coefficients was highly significant at an alpha level of less than .001 with eleven degrees of freedom.

All of the individual variables found to be significant came from the group entitled, Regular Source of Care Characteristics. These results indicate that consumer relationships with physicians the strongest influence on decisions regarding the use of Health Care Resources.

The first significant variable ($p < .05$) contained in the logistic regression was An Attempt to get an Appointment with a Regular Physician before Seeking Treatment at the Urgent Care Center. The hypothesis associated with this variable stated that if a consumer possessed this characteristic it would be indicative of an established physician relationship and tend to limit their initial and subsequent Use of Urgent Care. The analysis indicated that consumers who try to make appointments before seeking treatment tended not to Use the Urgent Care Center more than Once. Although it was expected that this variable and the variables relating to the identification of a regular physician would be highly related, a simple cross tab of the variables found no significant relationship. ($p > .11$) Furthermore, someone who does not specifically identify a particular regular physician may still prefer the appointment method of getting medical care and attempt to get an appointment before Using Urgent Care. Such differentiation would make both variables important and justify using them both in the analysis.

The next statistically significant variable ($p < .01$) identified in the regression was use of a Park Nicollet physician as a regular source of care. A priori, the author anticipated an inverse relationship between this variable and the dependent variable because the organization does not encourage its constituents to Use Urgent Care on a routine basis. However, the relationship between the variables indicates that if you identify your regular physician as a member of the Park Nicollet Medical Center Organization you are more likely to Use the Urgent Care Center More than Once. Since Park Nicollet Medical Center does not encourage repeat use of Urgent Care, unless all of the repeat users of Urgent Care are only using the Urgent Care department as a replacement for an emergency room visit or after other departments are closed, this result suggests the possibility of potential difficulties. These difficulties will be discussed in greater detail in the final section of this chapter.

The final statistically significant variable ($p < .001$) in the logistic regression was use of a non-Park Nicollet physician as a regular source of care. This variable behaved in accordance with the author's expectation. Its inverse relationship with the dependent variable indicated that if you used a non-Park Nicollet Physician as your regular source you were less likely to Use the Urgent Care Center More than Once. The literature suggests that consumers with established primary care physician relationships do not use Urgent Care Centers as much as those without such relationships. The results here show that this fact holds for consumers with non-Park Nicollet Medical Center regular sources of care in the Park Nicollet Medical Center service area. Also, in the highly competitive environment of the Twin

Cities where more physicians are being added regularly to an already overcrowded market it is highly probable that individual physician-patient relationships are being protected. Therefore, it is quite likely that physicians who are not part of the Park Nicollet Medical Center organization will do everything they can to be available for their patients to prevent the possibility of losing them to a more "convenient" source. Such actions would decrease the use of Urgent Care Centers. They would also limit their attractiveness because if you can get convenient care from your regular source the need for a unique delivery mechanism is removed.

Several of the other variables, although not significant warrant further discussion During the literature review, age was identified as a powerful determinant in the decision on whether or not to use Urgent Care. Although it did not wind up being statistically significant ($p > .075$) it was inversely related to the dependent variable meaning that as a consumer got older the probability of Using the Urgent Care Center More than Once decreased.

Another variable which came close to statistical significance ($p > .09$) was the expected waiting time to be treated in the Urgent Care Center. The relationship was as anticipated, indicating that as consumers expected to wait shorter periods of time to be treated in the urgent care center repeat use increased. This result suggests that in the Park Nicollet Medical Center Urgent Care Department convenient care, at least as defined by waiting time, was being provided. In order to address the full impact of this variable the average waiting time in other departments would be needed. If the Urgent Care Center is seeing consumers more quickly then there would

be a greater tendency toward substitution which is not what management intended.

There are two more independent variables which, although not significant in the regression, are worth discussing at this time. The Expected Cost of the Urgent Care Center Compared to a Regular Physician's Office was positively related to repeat use of the Urgent Care Center. As consumers expect to pay less at the Urgent Care Center they tend to Use it More than Once.

Finally, it was anticipated that the Expected Cost of the Urgent Care Center Compared to an Emergency Room Visit would be a major explainer of variance in the dependent variable. Although not significant ($p > .10$), the direction of the relationship between these two variables was positive and further emphasizes the issue of price sensitivity among consumers. As above, we found that as consumers expect to pay less for Urgent Care they tend to use the Urgent Care Center More than Once.

Table 3-14, allows us to assess the degree to which repeat use of Urgent Care would be affected by the significant independent variables. It appears that repeat use is very sensitive to these three variables. For example, the percentage change in the probability of repeat use when the consumer has a regular physician not with Park Nicollet Medical Center is 32%. To determine this percentage change for the discrete variables the following formula was used:

$$\% \Delta = \frac{\frac{e^{(z^*+B_i)}}{1+e^{z^*+B_i}} - \frac{e^{z^*}}{1+e^{z^*}}}{\frac{e^{z^*}}{1+e^{z^*}}}$$

z^* = a value (constant) such that $\frac{e^{z^*}}{1+e^{z^*}} = p$ = average probability of repeat use of the Urgent Care Center.

(Weissert and Scanlon, 1985)

In the case of the variable, regular physician not with Park Nicollet Medical Center, the large negative effect was anticipated because of the highly competitive influences in the Twin Cities medical community. Physicians are becoming more cognizant of the fact that their actions and attitudes can cause them to lose patients. Therefore, they are beginning to focus more on consumer needs.

TABLE 3-14
Percentage Change in Probability of
Repeat Use of the Urgent Care Center
for a Shift from 0 to 1 in the value of
dichotomous independent variables

Independent Variable	Percentage Change
Identification of a Regular Physician who is not a member of the Park Nicollet Medical Center Organization (NRPMD)	- 32%
Identification of a Regular Physician who is a member of the Park Nicollet Medical Center Organization (RPMD)	16.7%
An attempt to get an appointment with a regular physician before coming to the Urgent Care Center	- 11.8%

The fact that as a shift from 0 to 1 causes a 16.7% increase in the probability of using the Urgent Care Center More than Once when someone identifies a regular physician from Park Nicollet Medical Center was not anticipated. Of course, one of the purposes for the centers' development was to provide an alternative to expensive emergency room visits so we might expect some repeat use but 16.7% is quite large.

Finally, with regard to whether or not a consumer tried to make an appointment with a regular provider before coming to the Urgent Care Center, we see a decrease in repeat use when an appointment with a regular provider is sought. Such an occurrence is expected because again physicians are not anxious to lose customers so when someone tries to make an appointment there appears to be an increasing tendency to fit them in.

CHAPTER IV

SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

A. MAJOR FINDINGS

- If someone has a regular physician who is not part of the Park Nicollet Medical Center Organization the probability that they will use the Urgent Care Center More than Once is significantly decreased.
- Having a regular physician who is part of the Park Nicollet Medical Center Organization significantly increases the likelihood of Using the Urgent Care Center More than Once.
- An attempt to obtain an appointment with a regular physician before seeking treatment at the Urgent Care Center significantly reduces the likelihood of Using the Urgent Care Center More than Once.

B. CONCLUSIONS

The findings listed above and the information contained in earlier portions of this study have some very clear implications. They include:

. Competition is very keen in the Twin Cities area and it is the author's conclusion that this is causing the inverse relationship between repeat use of Urgent Care and having a regular physician who is not part of Park Nicollet Medical Center. Physicians are interested in maintaining their customers and will become more responsive to their needs as they perceive the threat of competition and I believe that is why there is less repeat use of the Urgent Care Center among those consumers with this characteristic. However, it is not clear how this competition factor affects one-time use of the urgent care center. Focusing on the fact that it is only repeat use which is in question the organization may be successfully meeting the needs of one time users thus fulfilling their goal of a convenient entry point for consumers who are not members of the organization's health plan.

. According to the Urgent Care Division guidelines of Park Nicollet Medical Center the Urgent Care Center was developed to provide a special type of health care delivery. It was designed to function as an overflow mechanism for regular departments, to provide a low cost, extended hour alternative to a hospital emergency room, and to act as a convenient entry point for fee-for-service consumers needing urgent attention. Unfortunately, it may have evolved into a preferred method of receiving routine care. Whether this evolution was due to consumer choice or occurred because of difficulties accessing other departments within the organization is an important issue. According to the data analyzed, approximately 51% of those consumers with a regular Park Nicollet Medical Center (PNMC) physician did not attempt to make an appointment

with their regular source before going to the urgent care center. This statistic suggests either a problem with the appointment system in regular departments or the perception by consumers that urgent care is available to meet all their health care needs. Either of these hypotheses would indicate that the organization needs to take a careful look at urgent care to determine the extent to which it is drawing people away from other internal departments, creating a shift in revenue and/or market share instead of an increase. If a shift is occurring then the utility of a capital expenditure for urgent care center becomes questionable. To cover the cost of capital required by the addition of a separate urgent care facility (workspace) either revenue must increase or expenses decrease as a result. The study did not address the issue of decreased expenses. Regarding increased revenue it seems quite clear that the major repeat users of urgent care are plan members which are not a source of increased revenue. Therefore, the urgent care center does not appear to be presently achieving the level of success, in terms of revenue, that management planned because increases in revenue to urgent care were likely to have occurred at the expense of other departments. The other point to consider in this conclusion deals with the organization's consumer orientation. By limiting the use of urgent care were consumer needs met in the most preferred manner. Therefore, it may be impossible to put limitations on urgent care within a multi-specialty group practice.

C. RECOMMENDATIONS

- Consideration must be given to what role the Urgent Care Center is going to fulfill in the organization. If it is going to function as a unique health care delivery mechanism then some stricter policy guidelines for its use must be considered. A mechanism must be employed to limit use to the intended purposes without creating negative feelings within plan members. More education about Urgent Care and reasons for its establishment might help in this area. Requiring an extra premium for its use by plan members during certain hours of the day for non-urgent conditions may be another alternative. The goal is to establish for both employees and the constituents involved the purpose of Urgent Care and why it is important to use it appropriately. Also, by realigning its use the organization can extend its marketing efforts to potentially attract new clients into the Urgent Care Center. The medical center should try to project the image of a convenient alternative for patients when their regular physician is unavailable.
- A determination of the reasons why plan members are not trying to make appointments with their regular source is my next recommendation. One key factor to determine is whether or not the assigned regular providers are aware that their patients are having any difficulty getting appointments.
- Other departments within the organization are now providing extended hours of care. The author recommends that a cost-benefit study be performed to determine if it would be less expensive to

extend hours in appropriate departments versus operating separate Urgent Care Centers.

- The author further recommends that an analysis be conducted to determine the cost savings which the organization has realized through reduced emergency room visits by plan members.
- Finally, the author would recommend that further study of Urgent Care be performed. As mentioned earlier in this study, several variables were not available in this analysis which may be important characteristics in the determination of Urgent Care use patterns. One of the most important considerations in subsequent research would be to insure that specific, meaningful time frames were attached to the variables. This approach would help in the generalizability of the results. In addition, a separate question to determine why the Urgent Care Center was being used more than once by MedCenters Health Plan members would provide a better indication of potential difficulties, if any, with other departments. If the repeat use is occurring for urgent conditions or after hour care and all other treatment is accomplished by the assigned regular source then it would indicate appropriate use.

APPENDIX A

PARK NICOLLET URGENT CARE CENTER CLIENT QUESTIONNAIRE

1. Is this visit a return visit, to this Urgent Care Center, for a problem previously seen here at the Urgent Care Center within the past 60 days?
   ____ YES ____ NO ____ UNSURE
   If YES, were you asked by a physician to come back to the Urgent Care Center?
   ____ YES ____ NO ____ UNSURE

2. Have you ever used an urgent care center before (not including a hospital emergency room)?
   ____ YES ____ NO ____ UNSURE

3. Did you try to make an appointment in a regular doctor's office before coming to the Urgent Care Center?
   ____ YES ____ NO ____ UNSURE

4. Do you have a regular Park Nicollet Medical Center physician?
   ____ YES ____ NO ____ UNSURE

5. Do you have a regular physician who is not with Park Nicollet Medical Center?
   ____ YES ____ NO ____ UNSURE

6. How ill or in pain did you feel before coming to the Urgent Care Center? (Circle most appropriate on a scale of 1 to 10 where 1 is the least/10 the most.)
   1 2 3 4 5 6 7 8 9 10

7. How worried were you about your problem?
   ____ a. Extremely worried ____ b. About one full day
   ____ c. A little worrked ____ d. Not worried

8. For the reason you came to the Urgent Care Center today, how long had you been feeling ill or in pain?
   ____ a. More than two days ____ b. About one full day
   ____ c. Less than a full day

9. How important was it to you to be seen today?
   ____ a. Extremely important ____ b. Very important
   ____ c. A little important ____ d. Not important

10. How long did you expect to have to wait to be seen?
    ____ a. No wait (seen immediately) ____ b. 1-15 minutes
    ____ c. 16 - 30 minutes ____ d. Over 30 minutes ____ e. Other

11. Do you expect to be seen by a certain physician whose name you know?
    ____ YES ____ NO ____ UNSURE

12. In what order do you expect the Urgent Care Centers' to see patients?
____ a. First come, first serve ____ b. Most ill first
____ c. Appointment ____ d. Other _____

13. Which days would you expect an Urgent Care Center to open? (select one from set)
____ a. Monday-Friday ____ b. Monday-Saturday
____ c. Every day of year ____ d. Other _____

14. What hours would you expect the Urgent Care Center to be open? (Please specify with hours.)
a. ____ o'clock to ____ o'clock
b. Other _____

15. If you thought you had a life threatening problem (like a heart attack) would you come to this Urgent Care Center?
____ YES ____ NO ____ UNSURE

16. How do you pay for your medical care?
____ a. I am a member of MedCenters Health Plan
____ b. I have Blue Cross/Blue Shield
____ c. I have Medicare
____ d. I have Medicaid
____ e. I have other insurance
____ f. I pay for care out of my own pocket
____ g. Other _____

17. Were you advised to come to the Urgent Care Center, for the problem you have today, by any of the following people? (You may check more than one)
____ a. Friend ____ b. Family member
____ c. A Park Nicollet physician ____ d. Other physician
____ e. Nurse ____ f. Doctor's receptionist
____ g. Other _____

18. How much do you expect the Urgent Care Center to cost compared to an emergency room at a hospital?
____ a. More ____ b. Less ____ c. About the same

19. How much do you expect the Urgent Care Center to cost compared to a regular doctor's office visit?
____ a. More ____ b. Less ____ c. About the same

20. Gender (Please check one) ____ Male ____ Female

21. Age (Please indicate as of last birthday) _____

22. What is the zip code where you live? _____

23. Please feel free to make comments about this survey or the Urgent Care Center. You may use the space below. Thank you for taking the time to respond to the questions.

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